Dr. Stirling A. Colgate has been a staff physicist at Lawrence Livermore National Lab. (1952-1965) and was a staff member at Los Alamos National Laboratory, [LANL] from 1976 to 1991 and from then to present has been an adjunct physicist at LANL. From 1965 through 1974 he was president of New Mexico Institute of Mining and Technology. He was elected to the National Academy of Science in 1985. In 1990 he received the Rossi prize for work in astrophysics; having predicted in 1963 the emission of neutrinos from supernovae, recently observed from the nearby Supernovae 1987A. He is a Senior fellow at LANL, a Fellow of the American Physical Society, and co-shared the Los Alamos Medal.

More important for this proposal is his experience in nuclear weapons, both design and diagnostics. In 1952-1954 he led diagnostic testing for several nuclear weapons in the Pacific for LANL and LLNL. He designed and led the gamma and neutron diagnostics for the Bravo test, (the US's largest thermonuclear explosion, 15 megatons) as well as several others for the LLNL tests. He designed and executed a weapons test at NTS in the 60's, and initiated the laser fusion and high temperature HE programs at LLNL. He led the axi-symmetric helical magnetic fusion program in plasma physics (the stabilized pinch) for 8 years at LLNL.

During 1958 and 1959 he served as scientific advisor to the U S State Department in Geneva for negotiations with the USSR for the cessation of nuclear testing. He has published over 300 papers in magnetic fusion, astrophysics, atmospheric physics, inertial fusion, information theory, and AIDS epidemiology. He also works in the fields of volcanic explosions, reactor safety, underground nuclear waste storage, underground stress engineering, tornadoes, vortices, and myopia. In 1985 he initiated at LANL mathematical and social understandings of the epidemiology of HIV. In 1991 he has contributed to technological discussions to use large compressed air excavation to clean up debris and mines surrounding the devastated Kuwait oil fields. He also works in national security and defense programs. He holds over 20 patents, including diesel engines and cryogenic machinery. He served in WW II in the US Merchant Marine. Dr. Stirling A.

Colgate is an associate staff member at Los Alamos National Lab, earned his BA and Ph.D. degrees in physics from Cornell Univ. with Robert Wilson. He initially worked on accelerator physics at Lawrence Berkeley Nat. Lab. with Louis Alvarez before joining LLNL at its inception. There he led the fast diagnostics for the weapons test for LLNL as well as LANL for the Castle tests including the Bravo test in the Pacific in 1954. He then led the helical magnetic fusion confinement program at LLNL for 8 years, started the laser inertial fusion laser program, and initiated calculations of stellar collapse and supernova explosions. In 1959 he became Consultant to the US state Department, for 2 the treaty on the Discontinuance of Nuclear Weapons Tests. In 1964 he became president of New Mexico Institute of Mining and Technology , working in atmospheric physics and astrophysics, and astronomy. He joined LLNL in 1976 becoming a group leader in astrophysics and fusion.

Research Interests:
Nuclear physics (diagnostics and fusion plasma confinement)
Astrophysics (supernovae, quasars, cosmic rays, solar physics, galaxy and super-massive black hole formation)
Atmospheric physics (tornadoes, thunderstorms)
Geotectonic engineering
Epidemiology
Human complexity

Memberships and Boards:
Member National Academy of Sciences
Fellow of the American Physical Soc.
Fellow of the American Association for the Advancement of Science
American Astronomical Society
American Meteorological Society
American Geophysical Society
Cosmic Physics Division of APS
International Astronomy Union
American Academy of Arts and Sciences
Founding Board, Santa Fe Inst.
Member of the Aspen Center for Physics Prizes Awards
Rossi Prize: Amer Astron. Society for Cosmic Ray Theory
Wetherill Prize: Franklin Institute, For Supernova Theory and the Importance of Neutrino Physics.

25 patents

300 papers and past memberships.